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UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH ADMINISTRATION
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE
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In cooperation with State, Federal and Other Agencies

COTTON INSECT CONDITIONS -- JUNE 17, 1949
(First Cotton Insect Survey Report for 1949)

The cotton insect survey in 1949 is being conducted in cooperation with State agencies as during previous years. All records relating to cotton insect conditions made by Bureau workers in the various States are submitted to the entomologists who compile and issue the reports in the States. Reports relating to cotton insect conditions are being issued in most of the leading cotton-growing States.

No shortages of insecticides and dusting equipment have been reported.

Boll weevils were abundant in most areas last fall. Winter conditions were favorable for their survival. Large numbers of weevils emerged from hibernation and reached cotton fields during May. Boll weevils are now more abundant then they were in 1948 in the cotton fields of North Carolina, South Carolina, Georgia, Alabama, Mississippi, Arkansas, and Louisiana.

A notable exception to the general abundance of boll weevils this spring is in the Lower Rio Grande Valley of Texas where all cotton stalks were destroyed during August 1948. In that area there are very few boll weevils and many fields are still free of weevils.

Cotton leafworms have not as yet been reported in the United States during 1949. The first cotton leafworms were collected in southern Texas during April in 1929, 1942, and 1943. The first leafworms were found in the same area during May in 1930, during each of the 8 years from 1934 to 1941, inclusive, and again in 1944. They did not make their appearance until June in 1931, 1933, 1945, 1946, 1947, and 1948. In one year, 1932, reports concerning the appearance of the cotton leafworm were not received until July.

Excerpts from weekly cotton Weather Bulletin issued by the Weather Bureau, U. S. Department of Commerce, New Orleans, Louisiana, June 14, 1949:

LOUISIANA: Weather favorable for weevils with considerable infestation.

MISSISSIPPI: Weather favorable for weevils, many infested fields.

ALABAMA: Weather favorable for weevils, activity increasing south.

GEORGIA: Weather very favorable for weevils.

SOUTH CAROLINA: Weather favorable for weevils, plentiful, poisoning active.

ARIZONA: Dry weather keeping insects in check generally.

CALIFORNIA: San Joaquin cotton mostly chopped, spraying and dusting for control of cotton insects.

BOLL WEEVIL

SOUTH CAROLINA: For 12 years spring examinations of surface woods trash have been made in the vicinity of the Pee Dee Experiment Station and the comparative number of live boll weevils found has proved to be closely correlated to the amount of boll weevil injury likely to result. The 1949 spring examinations for hibernating boll weevils indicate an average of 3969 live boll weevils per acre in areas adjacent to last year's cotton fields. This number is the highest on record. In 1948 an average of 2710 weevils per acre was found, and 2904 in 1947. The average over the 12-year period was 2299 weevils per acre.

Even though many boll weevils are entering the cotton fields, experience has shown that weather conditions during the summer will determine largely the actual damage to the cotton crop. Hot, dry weather during June and July usually results in comparatively light boll weevil damage even with a heavy initial infestation; a wet June ordinarily results in heavy boll weevil damage even though the initial infestation may be light. There are enough live boll weevils still in hibernation and in the cotton fields at the present time to cause serious losses to the cotton crop under normal conditions and farmers should be ready to fight the boll weevil.

Boll weevil emergence from hibernation cages at Florence is very high. Fifty weevils were removed from the cages during the week ending June 17 making a total of 492 to date. This compares with 8 in 1948; 147 in 1947; and 88 in 1946.

The boll weevil emergence into an early planted trap plot of one-fifth acre was less than the previous week. A total of 244 weevils were collected as compared to 370 weevils the previous week. A total of 1268 weevils have been taken from the trap plot to date. The emergence into the trap plot as compared with previous years through the first 15 days of June follows:

Year	Weevils Collected
1949	1268
1948	385
1947	994
1946	315
1945	536
1944	126
1943	429
1942	510
1941	785
1940	42

All of the 77 fields examined in 16 counties were infested at an average rate of 30% punctured squares as compared to 16% in 1948. In two fields less than 10% of the squares were punctured; in 35 fields from 11 to 25%; in 34 fields from 26 to 50%; and in 6 fields more than 50% of the squares were punctured.

Cloudy, rainy weather prevailed over most of the area covered by the survey in the Carolinas during the week which was very favorable for weevil development.

LOUISIANA: Fall and spring examinations of surface woods trash have been made in Madison Parish in the vicinity of Tallulah, Louisiana, for 13 years. More live weevils per acre were collected in 1949 spring examination than in any year since trash examinations were started in 1936.

The number of live weevils per acre in surface trash and the percent of weevils surviving the winter during the past 13 years are as follows:

Year	In Fall Examination	Number of Live Weevils Found Per Acre in Spring Examinations	Percent Survival of Weevils Entering Hibernation
1937	2118	50	2
1938	519	186	36
1939	1284	226	18
1940	2243	190	8
1941	721	920	- *
1942	1484	327	22
1943	2916	750	26
1944	2488	625	25
1945	2435	1512	62
1946	4199	1063	25
1947	2698	426	16
1948	1178	177	15
1949	2146	1710	80

* Samples taken during the winter of 1940-41 do not give a true picture of the percentage of weevils that survived hibernation. However, that was an extremely mild winter and weevil survival was very high.

Boll weevil emergence in hibernation cages at Tallulah from May 1 to June 10 is higher than any year since 1946. The survival for this period was 3.80% as compared to 0.36% in 1948, 1.36% in 1947, and 7.80% in 1946.

Cotton is late in northeast Louisiana and square examinations cannot be made in that area. All of 48 fields of late cotton examined in Madison Parish were infested at an average rate of 480 weevils per acre. In 18 fields examined in seven other parishes, 11 were infested at an average rate of 109 weevils per acre. In all fields of late cotton examined in northeastern Louisiana there was an average of 155 weevils per acre.

Square infestation counts were made in 40 fields in northeast Louisiana and 39 were infested at an average rate of 11% punctured squares. In 24 fields the infestation was less than 10%; in 13 fields from 11 to 25%; and in 3 fields from 26 to 50% of the squares were punctured.

In 23 fields examined in south central Louisiana, 17 were infested at an average rate of 3% punctured squares.

ARKANSAS: Plant examinations were made in 21 fields in Ashley, Chicot, and Desha Counties and 17 were infested at an average rate of 410 boll weevils per acre. The weevils are much more abundant than during June 1947 and 1948.

NORTH CAROLINA: Square infestation counts were made in 4 fields in Scotland, Hoke, and Robeson Counties. All fields were infested at an average rate of 49% punctured squares. Plant examinations were made in 11 fields and weevils were found at an average rate of 10 per 100 plants.

GEORGIA: Boll weevils are present and first generation weevils are emerging in most fields in southern Georgia. In the examination of 172 fields in 50 counties, only 9 fields were examined in which no weevils were found. In each of 10 counties at least one field was examined where the percentage of punctured squares ranged from 50 to 71%. The counties that had these high infestations were Bleckley, Dodge, Emanuel, Laurens, Macon, Tattnal, Treutlen, Washington, Wheeler, and Wilcox. In 61 of the fields the infestation did not exceed 10% punctured squares. In the other fields the infestations ranged from 10 to 50% punctured squares.

ALABAMA: First generation weevils are now emerging in southeast Alabama. In 32 fields examined in 4 counties in the south-central part of the State, no square infestation was found in 2 fields. In 7 of the fields less than 10% of the squares were punctured; in 10 fields from 11 to 25%; in 6 fields from 26 to 50%; and in 7 fields more than 50% of the squares were punctured.

W. A. Ruffin reported on June 20: "All reports indicate a rather serious boll weevil situation over most parts of Alabama. A few farmers in southeast Alabama have applied as many as 3 applications of poison this season. It is my opinion that general dusting in the extreme southern counties will be started during the week ending July 2.

"Weather conditions for the last several days and at the present are cloudy with showers. Sales of insecticides for use in dusting cotton are far above normal for this time of the year."

MISSISSIPPI: Clay Lyle, Entomologist, reported on June 20: "The cotton insect situation in Mississippi changed very little during the past week and the boll weevil infestation continues to be one of the most threatening on record. State Plant Board inspectors and government entomologists examined 264 fields in 38 counties, finding weevils in 208 fields at the average rate of 328 per acre in 167 fields where cotton was not yet squaring, and an average of 25% punctured squares in 41 infested fields of fruiting cotton. On this date last year the weevil population was 100 per acre and the average square infestation was 10%.

"The high weevil infestation is rather general over the entire State except in the extreme northeast corner and in some Delta locations where high water existed earlier. All square infestations reported this week are in the Delta and range as high as 80% in Issaquena County. In Bolivar County the Delta and Pine Land Company also reported 150 fields examined, with 37 out of 61 fields of young cotton averaging 344 weevils per acre, while 85 out of 89 fields of fruiting cotton averaged 25% punctured squares."

The boll weevil situation continues to be the worst in the Delta Counties at this season of the year than during any year since the establishment of the cotton insect research laboratory at Stoneville in 1934. Of 114 fields inspected 78 were infested with weevils at an average rate of 167 per acre. In 54 fields of squaring cotton, 41 were infested at an average rate of 25% punctured squares. With the high percentage of square infestation prevailing and the large weevil population being found in fields not yet squaring, the entire Delta appears vulnerable to severe early weevil damage.

TEXAS: Boll weevil infestations in the Lower Rio Grande Valley and the Coastal Bend area continue to be generally light.

In McLennan and Falls Counties in central Texas, 3500 seedling cotton plants were examined in 9 fields and boll weevils were found at an average rate of 44 per acre as compared to 128 in 1948 and 32 in 1947. Infestation counts made in 19 fields of early planted cotton averaged 32% punctured squares. The square infestation counts as compared to past years on this date are as follows:

1949	7,500 sqs.,	19 fields,	ave.	32%	pct. sqs.,	range	4 to 60%
1948	4,500 "	38 "	"	42%	"	"	2 to 82%
1947	3,000 "	5 "	"	20%	"	"	1 to 54%
1946	3,400 "	17 "	"	76%	"	"	55 to 88%
1945	2,100 "	7 "	"	19%	"	"	10 to 44%
1944	3,600 "	14 "	"	40%	"	"	15 to 74%
1943	21,100 "	17 "	"	10%	"	"	3 to 25%
1942	20,750 "	24 "	"	32%	"	"	12 to 78%
1941	11,500 "	3 "	"	26%	"	"	8 to 60%

There are sufficient weevils in the cotton fields in the Waco area to cause serious damage to the cotton crop unless they are controlled by hot, dry weather or insecticides.

OKLAHOMA: A total of 131 fields were examined in Oklahoma during the week. Seventy-four fields were in the central and western part of the State and 57 were in eastern Oklahoma. Boll weevils were found in 20 of the 74 fields examined in central and western areas and in 30 of the 57 fields examined in eastern Oklahoma. The heaviest fields were in Love, Pittsburg, Sequoyah, and Muskogee Counties. One of the fields in Muskogee County had 2610 weevils per acre. Cotton is now beginning to square in many fields and some dusting with insecticides has been started in the southwestern part of the State. (C. F. Stiles, June 18)

COTTON FLEAHOPPER

Approximately 90% of all cotton fields in the Coastal Bend Area, consisting of several hundred thousand acres, have been dusted or sprayed one or more times for control of the cotton fleahopper and other injurious insects.

Cotton fleahopper infestations in general remain low throughout central Texas, although infestations are high enough to justify control measures in a few fields.

MISCELLANEOUS INSECTS

TEXAS: Grasshoppers continue to do damage in the central part of the State and control measures are being applied.

A few bollworm eggs were observed on cotton during the week, which is usual for this season of the year.

Most of the cotton is now recovering from thrip injury. Fruiting has been delayed about three weeks in heavily infested fields that were not treated early enough to prevent damage.

OKLAHOMA: Webworms are numerous in some cotton fields adjacent to alfalfa. Serious damage to cotton is expected in many fields when the alfalfa hay is harvested.

Grasshoppers are reported ranging from 2 to 3 per square yard to over 300 per square yard in alfalfa and wheat margins adjacent to cotton fields.

MISSISSIPPI: Tarnished plant bugs were reported in 70 Delta cotton fields and rapid plant bugs were reported in 83 fields.

GEORGIA: The cotton square borer, *Strymon melinus* Hbn., is reported as abundant in southern Georgia on beans and cotton. In one cotton field 20% of the squares had been damaged by this insect.

INSECTS ON IRRIGATED COTTON OF THE SOUTHWEST

TEXAS: The seed-corn maggot, *Hylemya cilicrura* (Rond.), caused some damage to germinating cottonseed and the underground portions of young seedling cotton plants in the El Paso Valley during early May. Their attacks made it necessary to replant in spots. The insect was reported in greatest numbers on cotton following alfalfa where decaying alfalfa roots and stems were attractive to the adult flies for oviposition. Difficulty in obtaining cotton stands following alfalfa in the El Paso Valley has been generally recognized but in previous years the principal insect damage was attributed to cutworms.

The beet armyworm infestations on cotton in the El Paso Valley are decreasing. Most of the older larvae have pupated and few damaging infestations remain. On one farm there were sufficient young larvae to warrant control during the week.

Heavy aphid infestation has appeared in a few fields; however, parasites and predators are bringing the infestations under control. A very high percentage of parasitization has been noted. In a few fields where both aphids and beet armyworms were causing damage, insecticides were applied for their control.

ARIZONA: Salt-marsh caterpillars have been observed feeding on cotton in scattered areas in the Salt River Valley northwest of Litchfield, south of Waddell, and in the Buckeye area. Most of the infestations thus far have been spotted, occurring mainly along the edge of cotton fields where the caterpillars have moved from fresh cut alfalfa or nearby weeds. Insecticides have been applied in dust and spray form for their control with satisfactory results.

Damaging infestations of the beet armyworm were reported on cotton in the Santa Cruz Valley near Marana. Approximately 350 acres have been sprayed with insecticides for their control. A small acreage of cotton in the Continental area was dusted for darkling beetle control.

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